

POWER CONVERTER FOR AN ELECTRIC ENGINE START SYSTEM

ABSTRACT OF THE DISCLOSURE

An electric engine starting system includes a permanent magnet motor that is used to start the engine and then to generate power for powering a load while the engine is running. A disclosed system includes a first phase controlled rectifier in series with a power converter and a second phase controlled rectifier. During an engine starting operation, the first phase controlled rectifier is switched to couple the permanent magnet motor to a power source for starting the engine. Once the engine is running, the first phase controlled rectifier is switched off and the second phase controlled rectifier is switched on. The second phase control rectifier converts variable AC power from the motor into DC power. The power converter converts the DC power into an appropriate power for driving the load. One disclosed example includes a filter between the power converter and the load to ensure that the load receives a selected quality of power.